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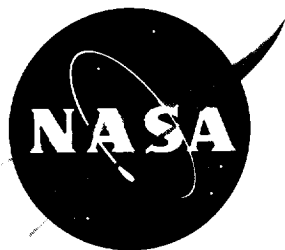
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NASA REPORTS

Special Publication

1. X-Ray and Gamma Ray Astronomy Detectors, NASA SP-517, 1994. R. Decher, B. D. Ramsey, and R. Austin. (ES84)

Conference Publication

1. Joint Launch + One Year Science Review of USML-1 and USMP-1 with the Microgravity Measurement Group. NASA CP-3272, Vols. I and II, May 1994. N. Ramachandran, D. O. Frazier, S. L. Lehoczky, and C. R. Baugher. (ES75)

Technical Memorandum

1. MAMS Data for the Convection and Moisture Experiment (CAMAX). NASA TM-108435, January 1994. A. R. Guillory, G. J. Jedlovec, and R. J. Atkinson. (ES43)
2. Survey of Visualization and Analysis Tools. NASA TM-108436, January 1994. P. J. Meyer. (ES44)
3. A Survey of Geographical Information Systems Applications for the Earth Science and Applications Division, Space Sciences Laboratory, Marshall Space Flight Center. NASA TM-108438, February 1994. D. Rickman, K. A. Butler, and C. A. Laymon. (ES44)
4. Inter-Comparison of Wildfire and High-Resolution Interferometer Sounder (HIS) Data from STORM-FEST: An Investigation of Wildfire Spectral Channel Discrepancies. NASA TM-108439, March 1994. G. J. Jedlovec and G. S. Carlson. (ES43)
5. Operations Summary for the Convection and Moisture Experiment (CAMEX). NASA TM-108445, March 1994. V. L. Griffin, A. R. Guillory, M. Susko, and J. E. Arnold. (ES43)
6. NASA Marshall Space Flight Center Solar Observatory Report—July-October 1993. NASA TM-108448, April 1994. J. E. Smith. (ES82)
7. Ampoule Failure Sensor Time Response Testing-Experiment 1. NASA TM-108449, April 1994. M. L. Johnson and D. A. Watring. (ES75)

Technical Memorandum (concluded)

8. Space Sciences Laboratory Publications and Presentations—January 1-December 31, 1993. NASA TM-108450, April 1994. T. W. Moorehead (Compiler). (ES02)
9. National Aerospace Plane (NASP) X-30 Natural Environment Requirements Document (Rev. 1.0). NASA TM-108451, April 1994. D. L. Johnson. (ES44)
10. Ampoule Failure Sensor Time Response Testing—Experiments 2 and 3. NASA TM-108458, June 1994. M. L. Johnson and D. A. Watring. (ES75)
11. Dynamics Explorer 1, Retarding Ion Mass Spectrometer Summary Spectrograms—81/280 to 81/365 Spin-Time Spectrograms for H^+ , He^+ , O^+ , N^+ , O^{++} , $M/Z=2$, and Molecular Ions. NASA TM-108462, July 1994. DE 1/RIMS Investigators; B. L. Giles, point of contact. (ES83)
12. Dynamics Explorer 1, Retarding Ion Mass Spectrometer Summary Spectrograms—82/001 to 82/109 Spin-Time Spectrograms for H^+ , He^+ , O^+ , N^+ , O^{++} , $M/Z=2$, and Molecular Ions. NASA TM-108468, October 1994. DE 1/RIMS Investigators; B. L. Giles, point of contact. (ES83)
13. NASA Marshall Space Flight Center Solar Observatory Report, March-May 1994. NASA TM-108471, December 1994. J. E. Smith. (ES82)

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2. Ampoule Failure Sensor Development for Semiconductor Crystal Growth Experiments. *J. Cryst. Growth*, 140, 41-44 (1994). D. A. Watring and M. Johnson. (ES75)
3. ATLAS Space Shuttle Studies Earth's Atmosphere and Solar Input. *Eos*, 75(29), 321-322 (1994). T. L. Miller, S. A. Smith, and J. A. Kaye. (ES42)
4. BATSE Gamma-Ray Burst Line Search. I. Search for Narrow Lines in Spectroscopy Detector Data. *Astrophys. J. Lett.*, 433, L77-L80 (1994). D. M. Palmer, B. J. Teegarden, B. E. Schaefer, T. L. Cline, D. L. Band, L. A. Ford, J. L. Matteson, W. S. Paciesas, G. N. Pendleton, M. S. Briggs, R. D. Preece, G. J. Fishman, C. A. Meegan, R. B. Wilson, and J. P. Lestrade. (ES84)
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43. The First BATSE Gamma-Ray Burst Catalog. *Astrophys. J. Suppl.*, 92, 229-283 (1994). G. J. Fishman, C. A. Meegan, R. B. Wilson, M. N. Brock, J. M. Horack, C. Kouveliotou, S. Howard, W. S. Paciesas, M. S. Briggs, G. N. Pendleton, T. M. Koshut, R. S. Mallozzi, M. Stollberg, and J. P. Lestrade. (ES81)
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50. Remote Sensing of the Magnetopause and Boundary Layers by Radio Sounding. 1994 Spring Meeting of the American Geophysical Union, Baltimore, Maryland, May 23-27, 1994; Eos, 75(16), 259 (1994). S. F. Fung, R. F. Benson, J. L. Green, M. F. Smith, D. L. Carpenter, W. Calvert, D. L. Gallagher, P. H. Reiff, B. W. Reinisch, and W.W.L. Taylor. (ES83)
51. Results from GROCE, A Real-Time Search for the Optical Counterparts of Gamma-Ray Bursts. 185th Meeting of the American Astronomical Society, Tucson, Arizona, January 8-13, 1995; Bull. AAS, 26(4), 1509 (1994). C. Akerlof, B. Lee, S. Barthelmy, T. Cline, N. Gehrels, E. Ables, R. Bionta, L. Ott, H.-S. Park, G. Fishman, C. Kouveliotou, C. Meegan, and D. Ferguson. (ES81)
52. Ring Current Decay and the Corresponding ENA Flux. 1994 AGU Western Pacific Geophysics Meeting, Hong Kong, July 25-29, 1994; Eos (1994). M. C. Fok, T. E. Moore, E. C. Roelof, and C. J. Chase. (ES83)
53. The Role of Alfvén Waves in Solar Wind Acceleration. 185th Meeting of the American Astronomical Society, Tucson, Arizona, January 8-13, 1995; Bull. AAS, 26(4), 1472 (1994). M. Krogulec, Z. E. Musielak, S. T. Suess, S. F. Nerney, and R. L. Moore. (ES82)

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55. ROSAT Observations of the May 1 1992 Gamma Ray Burst Source. 184th Meeting of the American Astronomical Society, Minneapolis, Minnesota, May 29-June 2, 1994; Bull. AAS, 26(2), 873 (1994). M. Sommer, K. Hurley, P. Li, C. Kouveliotou, G. J. Fishman, M. Boer, M. Niel, J. Laros, and T. Cline. (ES81)
56. Search for Faint Black Hole Transients: Results for EX01846-031. 185th Meeting of the American Astronomical Society, Tucson, Arizona, January 8-13, 1995; Bull. AAS, 26(4), 1514 (1994). J. Grindlay, D. Barret, P. Bloser, M. Garcia, J. McClintock, P. Zhao, S. Zhang, A. Harmon, W. Paciesas, E. Ford, P. Kaaret, and M. Tavani. (ES84)
57. A Search for Hard X-Ray Emission from Globular Clusters with BATSE. 185th Meeting of the American Astronomical Society, Tucson, Arizona, January 8-13, 1995; Bull. AAS, 26(4), 1350 (1994). E. C. Ford, M. Tavani, P. Kaaret, B. A. Harmon, and S. N. Zhang. (ES84)
58. Search for Hard X-Ray Emission from the Soft X-Ray Transient Aquila X-1. 185th Meeting of the American Astronomical Society, Tucson, Arizona, January 8-13, 1995; Bull. AAS, 26(4), 1484 (1994). B. A. Harmon, S. N. Zhang, W. S. Paciesas, M. Tavani, P. Kaaret, and E. Ford. (ES84)
59. Selenium Precipitation in ZnSe Crystals Grown by the Physical Vapor Transport. 1994 Meeting of the American Physical Society, Pittsburgh, Pennsylvania, March 21-25, 1994; Bull. APS (1994). K. T. Chen, M. A. George, Y. Zhang, A. Burger, C.-H. Su, Y.-G. Sha, D. C. Gilles, and S. L. Lehoczky. (ES75)
60. Simulator for Hydrology and Energy Exchange at the Land Surface and Its Development Through the CaPE Hydrometeorology Project. 1994 Spring Meeting of the American Geophysical Union, Baltimore, Maryland, May 23-27, 1994; Eos, 75(16), 173 (1994). C. A. Laymon, W. L. Crosson, and S. J. Goodman. (ES44)
61. The Solar Origin of and Mass Flux in High Speed Streams at Ulysses, December 1992-August 1993. 1994 Spring Meeting of the American Geophysical Union, Baltimore, Maryland, May 23-27, 1994; Eos, 75(16), 277 (1994). S. T. Suess, M. Neugebauer, B. E. Goldstein, and G. Poletto. (ES82)

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63. The Solar X-Ray Imager for the Geostationary Operational Environmental Satellite (GOES). 1994 Spring Meeting of the American Geophysical Union, Baltimore, Maryland, May 23-27, 1994; *Eos*, 75(16), 275 (1994). J. Davis and P. L. Bornmann. (ES82)
64. A Statistical Analysis of the Barium Star Spatial Distribution and Luminosity Function: Preliminary Results. 184th Meeting of the American Astronomical Society, Minneapolis, Minnesota, May 29-June 2, 1994; *Bull. AAS*, 26(2), 954 (1994). J. M. Myers, B. W. Mulligan, M. J. Johnson, J. Hakkila, and C. A. Meegan. (ES84)
65. A Statistical Analysis of the Type I Cepheid Spatial Distribution and Luminosity Function: Preliminary Results. 184th Meeting of the American Astronomical Society, Minneapolis, Minnesota, May 29-June 2, 1994; *Bull. AAS*, 26(2), 954 (1994). P. T. Bennett, J. Hakkila, and C. A. Meegan. (ES84)
66. A Statistical Analysis of the Type II Cepheid Spatial Distribution and Luminosity Function: Preliminary Results. 184th Meeting of the American Astronomical Society, Minneapolis, Minnesota, May 29-June 2, 1994; *Bull. AAS*, 26(2), 954 (1994). J. E. Marquardt, J. Hakkila, and C. A. Meegan. (ES84)
67. A Statistical Analysis of the Wolf-Rayet Star Spatial Distribution and Luminosity Function: Preliminary Results. 184th Meeting of the American Astronomical Society, Minneapolis, Minnesota, May 29-June 2, 1994; *Bull. AAS*, 26(2), 954 (1994). J. C. Hallum, J. Hakkila, and C. A. Meegan. (ES84)
68. A Study of Pulse Profile Variations from EXO 2030+375 with BATSE. 185th Meeting of the American Astronomical Society, Tucson, Arizona, January 8-13, 1995; *Bull. AAS*, 26(4), 1485 (1994). M. T. Stollberg, W. S. Paciesas, M. H. Finger, R. B. Wilson, and G. J. Fishman. (ES84)
69. 10 Micron Spectroscopy of 51 Ophiuchi. 184th Meeting of the American Astronomical Society, Minneapolis, Minnesota, May 29-June 2, 1994; *Bull. AAS*, 26(2), 883 (1994). D. K. Lynch, R. W. Russell, J. A. Hackwell, S. Fajardo-Acosta, R. Knacke, M. Hanner, and C. Telesco. (ES84)
70. 35-Day Evolution of the Her X-1 Pulse Profile: Evidence for an Inner Disk Occultation of the Pulsar. 185th Meeting of the American Astronomical Society, Tucson, Arizona, January 8-13, 1995; *Bull. AAS*, 26(4), 1485 (1994). D. M. Scott. (ES84)

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71. Uncertainties in X-Ray Coronal-Plasma Temperature Diagnostics Using the ASCA/SIS. 184th Meeting of the American Astronomical Society, Minneapolis, Minnesota, May 29-June 2, 1994; Bull. AAS, 26(3), 1213 (1994). M. E. Sulkanen, D. A. Swartz, S. L. O'Dell, and A. F. Tennant. (ES84)
72. The Use of Radio Imaging in Substorm Studies. 1994 Spring Meeting of the American Geophysical Union, Baltimore, Maryland, May 23-27, 1994; Eos, 75(16), 259 (1994). P. H. Reiff, J. L. Green, R. F. Benson, S. F. Fung, M. F. Smith, W. Calvert, D. L. Carpenter, D. L. Gallagher, B. W. Reinisch, and W.W.L. Taylor. (ES83)
73. The Wall of Turbulent Reconnection in a Large Solar Flare. 1994 Spring Meeting of the American Geophysical Union, Baltimore, Maryland, May 23-27, 1994; Eos, 75(16), 263 (1994). R. L. Moore, T. N. LaRosa, and L. E. Orwig. (ES82)

PRESENTATIONS

1. Aircraft Investigations of Lightning and Thunderstorms During TOGA-COARE. AMS Annual Meeting, Nashville, Tennessee, January 23-28, 1994. R. Blakeslee, J. Bailey, and H. Christian. (ES43)
2. Applications of Electrodynamic Tethers to Investigations in Ionospheric, Thermospheric, and Mesospheric Physics. Workshop on Space Tethered Missions for ITM Science, Ann Arbor, Michigan, July 6-8, 1994. N. H. Stone and M. O. Chandler. (ES83)
3. An Archive of Digital Data from the Defense Meteorological Satellite Program (DMSP). AMS 10th International Conference on Interactive Information and Processing Systems (IIPS) for Meteorology, Oceanography, and Hydrology, Nashville, Tennessee, January 23-28, 1994. H. W. Kroehl, G. R. Scharfen, E. S. Arrance, and S. J. Goodman. (ES42)
4. Astronomical Observations with Normal Incidence Multilayer Optics IV: Selection of Spectral Lines. SPIE's 1994 International Symposium on Optics, Imaging, and Instrumentation, San Diego, California, July 24-29, 1994. A.B.C. Walker, Jr., R. B. Hoover, T. W. Barbee, Jr., C. DeForest, and J. Plummer. (ES82)
5. Basic Feature of the STS/Spacelab Vibration Environment. Fifth European Symposium on Space Environmental Control Systems and 24th International Conference on Environmental Systems, Friedrichshafen, Germany, July 20-23, 1994. C. R. Baugher and N. Ramachandran. (ES75)
6. BATSE Earth Occultation Observations of Cygnus X-1 from 1991 to 1994: Long-Term Temporal Behavior. 1994 Meeting of the AAS High Energy Astrophysics Division, Napa Valley, California, November 2-5, 1994. W. S. Paciesas, G. N. Pendleton, B. A. Harmon, C. A. Wilson, B. C. Rubin, et al. (ES84)
7. BATSE Observations of Galactic Black Hole Candidates. NATO Advanced Study Institute: The Gamma-Ray Sky with Compton GRO and Sigma, Les Houches, France, January 25-February 4, 1994 (to appear in proceedings). W. S. Paciesas, B. A. Harmon, B. C. Rubin, C. A. Wilson, and S. N. Zhang. (ES84)
8. BATSE Observations of Gamma-Ray Bursts. 30th Plenary Meeting of COSPAR, Hamburg, Germany, July 20-21, 1994. C. Kouveliotou. (ES84)

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9. BATSE Observations of the Power Spectrum of Nova Persei. NATO Advanced Study Institute: The Gamma-Ray Sky with Compton GRO and Sigma, Les Houches, France, January 25-February 4, 1994 (to appear in proceedings). B. C. Rubin, C. Kouveliotou, J. van Paradijs, M. H. Finger, B. A. Harmon, G. J. Fishman, C. A. Meegan, R. B. Wilson, and W. S. Paciesas. (ES84)
10. BATSE Observations of the Reactivation of the Soft Gamma Repeater SGR 1806-20. New Horizon of X-Ray Astronomy--First Results from ASCA, Tokyo, Japan, March 8-11, 1994 (to appear in proceedings). C. Kouveliotou. (ES84)
11. Challenges and Opportunities in Visualization for NASA's EOS Mission to Planet Earth. IEEE Visualization '94 Conference, Washington, D.C., October 17-21, 1994. M. Botts, J. D. Dykstra, L. S. Elson, S. J. Goodman, and M. Lee. (ES44)
12. Characteristics of Annulus Baroclinic Wave Structure During Amplitude Vacillation. International Symposium on Life Cycles of Extratropical Cyclones, Bergen, Norway, June 27-July 1, 1994. H.-I. Lu and T. L. Miller. (ES42)
13. De Novo Design of Human Immunodeficiency Virus Protease-Inhibitor Complexes. International Conference on Evolutionary Computation, Jerusalem, Israel, October 9-14, 1994. D. A. Noever and S. Baskaran. (ES76)
14. De Novo Design of Human Immunodeficiency Virus Protease-Inhibitor Complexes. Technology 2004 Symposium, Washington, D.C., November 1994. D. A. Noever. (ES76)
15. Design, Structure, and Performance of Narrow Band Multilayer Mirrors for Solar Imaging. SPIE's 1994 International Symposium on Optics, Imaging, and Instrumentation, San Diego, California, July 24-29, 1994. J. Pedulla, R. D. Deslattes, C. Tarrio, A. Bartos, and R. B. Hoover. (ES82)
16. The Development of Microstrip Proportional Counters for X-Ray Astronomy. SPIE's 1994 International Symposium on Optics, Imaging, and Instrumentation, San Diego, California, July 24-29, 1994 (to appear in proceedings). B. D. Ramsey, J. J. Kolodziejczak, A. Fulton, J. Mir, and M. C. Weisskopf. (ES84)

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17. Development of a Hybrid Gas Detector/Phoswich for Hard X-Ray Astronomy. SPIE's 1994 International Symposium on Optics, Imaging, and Instrumentation, San Diego, California, July 24-29, 1994 (to appear in proceedings). M. M. Pimplerl, B. D. Ramsey, R. A. Austin, T. Minimatani, M. C. Weisskopf, et al. (ES84)
18. Development of the Water Window Imaging X-Ray Microscope. SPIE's 1994 International Symposium on Optics, Imaging, and Instrumentation, San Diego, California, July 24-29, 1994. R. B. Hoover, D. L. Shealy, A.B.C. Walker, Jr., P. C. Baker, and T. W. Barbee, Jr. (ES82)
19. Diagnostics of Macroscale Cloud Systems and Their Relationships to Kinematic and Thermodynamic Forcing. European Conference on Global Energy and Water Cycle, London, United Kingdom, July 18-22, 1994. Franklin R. Robertson and William E. McCaul. (ES42)
20. Earth Occultation All-Sky Imaging with BATSE/CGRO. Workshop on Imaging in High Energy Astronomy, Frascati, Italy, September 26-30, 1994 (to appear in proceedings). S. N. Zhang, G. J. Fishman, B. A. Harmon, and W. S. Paciesas. (ES84)
21. Earth Occultation All-Sky Imaging with BATSE/CGRO. Colloquium, University of Southampton, United Kingdom, September 22-23, 1994. S. N. Zhang, G. J. Fishman, B. A. Harmon, and W. S. Paciesas. (ES84)
22. Effects on the Chemical and Optical Properties of Copper when Exposed in a Low-Earth Orbit. Eighth Annual Alabama Materials Research Conference, Tuscaloosa, Alabama, September 26-27, 1994. P. J. Pettigrew, G. Raiker, R. Connatser, L. Christl, J. C. Gregory, and P. Peters. (ES75)
23. An Empirically Derived Time-Dependent Plasmasphere. 1994 Huntsville Workshop, Guntersville, Alabama, October 16-19, 1994 (to appear in proceedings). D. L. Gallagher, P. D. Craven, and R. H. Comfort. (ES83)
24. Evaluating Microscale Effects on Mesoscale Transport. 1994 Huntsville Workshop, Guntersville, Alabama, October 16-19, 1994 (to appear in proceedings). T. E. Moore. (ES83)
25. Gamma-Ray Bursts: Observational Overview. IAU Symposium No. 165, Compact Stars in Binaries, The Hague, The Netherlands, August 15-19, 1994 (to appear in proceedings). G. J. Fishman. (ES81)

Presentations (continued)

26. Gamma-Ray Bursts: Observational Overview and Counterpart Prospects. IAU Colloquium No. 151, Flares and Flashes, Sonnenberg, Germany, December 5-9, 1994 (to appear in proceedings). G. J. Fishman. (ES81)
27. Gamma-Ray Burst Observations from BATSE on the Compton Observatory. NATO Advanced Study Institute: The Gamma-Ray Sky with Compton GRO and Sigma, Les Houches, France, January 25-February 4, 1994 (to appear in proceedings). G. J. Fishman. (ES81)
28. Gamma-Ray Bursts: Present Status of Observations. 17th Texas Symposium on Relativistic Astrophysics, Munich, Germany, December 12-17, 1994 (to appear in proceedings). G. J. Fishman. (ES81)
29. Global Distributions of Lightning Mapped from Nighttime Visible Band DMSP Satellite Data. Lightning and Mountains 1994 Conference, Chamonix Mont-Blanc, France, June 6-8, 1994. R. G. Barry, G. R. Scharfen, K. W. Knowles, and S. J. Goodman. (ES44)
30. Ground-Based Research on the Growth of II-VI Semiconductors by Physical Vapor Transport. 32nd AIAA Aerospace Sciences Meeting, Reno, Nevada, January 10-13, 1994. C.-H. Su, Y.-G. Sha, M. P. Volz, D. C. Gillies, F. R. Szofran, S. L. Lehoczky, and J. C. Wang. (ES75)
31. Ground-to-Orbit Transfer of the AXAF-I Flux Scale: In Situ Contamination Monitoring of X-Ray Telescopes. SPIE's 1994 International Symposium on Optics, Imaging, and Instrumentation, San Diego, California, July 24-29, 1994 (to appear in proceedings). R. F. Elsner, M. Joy, S. L. O'Dell, B. D. Ramsey, and M. C. Weisskopf. (ES84)
32. Guess Dependence of the Physical Split Window Technique for the Retrieval of Integrated Water Content. Seventh Conference on Satellite Meteorology and Oceanography, Monterey, California, June 6-10, 1994. Gary J. Jedlovec and Grant S. Carlson. (ES43)
33. Heat, Moisture, and Radiation Diagnostics of Convectively-Active Storms Over the GCIP Area. European Conference on the Global Energy and Water Cycle, London, England, July 1994. D. J. Perkey, S. R. Dembek, F. R. Robertson, and K. G. Doty (ES42)
34. High Energy Spectral Evolution of GRBs Observed by BATSE. 1994 Meeting of the AAS High Energy Astrophysics Division, Napa Valley, California, November 2-5, 1994. R. D. Preece, M. S. Briggs, G. N. Pendleton, W. S. Paciesas, C. Kouveliotou, et al. (ES84)

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35. High Speed Solar Wind Streams and Coronal Bright Points. Third SOHO Workshop, Estes Park, Colorado, September 26-29, 1994. G. Poletto, S. T. Suess, J. Khan, Y. Uchida, E. Hier, B. Goldstein, M. Neugebauer, and K. Harvey. (ES82)
36. High Resolution X-Ray Spectroscopy with a Rocket Borne Cosmic X-Ray Microcalorimeter Spectrograph. SPIE's 1994 International Symposium on Optics, Imaging, and Instrumentation, San Diego, California, July 24-29, 1994. A.B.C. Walker, Jr., R. B. Hoover, L. Lesyna, and M. P. Ulmer. (ES82)
37. Imaging Gas Counters for X- and Gamma-Ray Astronomy. Workshop on Imaging in High Energy Astronomy, Frascati, Italy, September 26-30, 1994 (to appear in proceedings). B. D. Ramsey. (ES84)
38. The Imaging Properties of a Silicon Wafer X-Ray Telescope. SPIE's International Symposium on Optics, Imaging, and Instrumentation, San Diego, California, July 24-29, 1994 (to appear in proceedings). M. Joy, M. C. Weisskopf, S. Fair, J. Kolodziejczak, and B. D. Ramsey. (ES84)
39. The Importance of "Electron Tracking" in Proportional Counters. SPIE's 1994 International Symposium on Optics, Imaging, and Instrumentation, San Diego, California, July 24-29, 1994 (to appear in proceedings). J. Youngen, R. Austin, K. Dietz, S. L. O'Dell, B. D. Ramsey, A. Tennant, and M. C. Weisskopf. (ES84)
40. Influence of Substituents on Hyperpolarizability of Substituted Benzylidene-Anils. 71st Annual Meeting of the Alabama Academy of Science, Troy, Alabama, March 23-26, 1994. K. Bhat, K. J. Chang, M. D. Aggarwal, W. S. Wang, M. Sanghadasa, T. A. Barr, Jr., N. B. Laxmeshwar, B. G. Penn, and D. O. Frazier. (ES76)
41. INTEGRAL X-Ray Monitor: A Proposal for the Hard X-Ray Imager On-board INTEGRAL. Workshop on Imaging in High Energy Astronomy, Frascati, Italy, September 26-30, 1994 (to appear in proceedings). P. Ubertini, B. Ramsey, M. Weisskopf, et al. (ES84)
42. The Intensity and Spectral Behavior of GRO J1719-24 = GRS 1716-249 (X-Ray Nova Ophiuchi 1993). IAU Symposium No. 165, Compact Stars in Binaries, The Hague, The Netherlands, August 15-19, 1994 (to appear in proceedings). B. A. Harmon, C. A. Wilson, W. S. Paciesas, G. N. Pendleton, B. C. Rubin, and S. N. Zhang. (ES84)

Presentations (continued)

43. Intercomparisons of Global Lightning and Rainfall Observations from Space. AMS Symposium on the Global Electric Circuit, Global Change, and the Meteorological Applications of Lightning Information, Nashville, Tennessee, January 23-28, 1994. S. J. Goodman, H. J. Christian, and G. Scharfen. (ES42)
44. Intransitivities in Numerical Climate Prediction. AMS Sixth Conference on Climate Variations, Nashville, Tennessee, January 23-28, 1994. H.-I. Lu, and T. L. Miller. (ES42)
45. Large Scale Structure of Water Vapor and Condensate Over the TOGA-COARE Region. AMS Sixth Conference on Climate Variations, Nashville, Tennessee, January 23-28, 1994. Franklin R. Robertson and E. W. McCaul. (ES42)
46. Large-Scale Water Vapor and Condensate Balance Over the TOGA-COARE Region. AGU Chapman Conference on Water Vapor in the Climate System, Jekyll Island, Georgia, October 25-28, 1994 (to appear in proceedings). F. R. Robertson, E. W. McCaul, and C. Cohen. (ES42)
47. Large Third-Order Nonlinearities of Metal-Free Phthalocyanines Films. OSA Annual Meeting and ILS-X, Dallas, Texas, October 2-7, 1994. H. Abdeldayem, C. E. Banks, R. Hicks, B. G. Penn, and D. O. Frazier. (ES75)
48. The Long-Term Hard X-Ray Behavior of Cygnus X-1. IAU Symposium No. 165, Compact Stars in Binaries, The Hague, The Netherlands, August 15-19, 1994 (to appear in proceedings). W. S. Paciesas, G. N. Pendleton, B. A. Harmon, C. A. Wilson, B. C. Rubin, J. C. Ling, R. T. Skelton, and W. A. Wheaton. (ES84)
49. Mass Flux and Crystal Growth of ZnSe by PVT. Eighth International Conference on Vapor Growth and Epitaxy, Germany, July 24-29, 1994. Y.-G. Sha, C.-H. Su, W. Palosz, M. P. Volz, D. C. Gillies, F. R. Szofran, S. L. Lehoczky, H.-C. Liu, and R. F. Brebrick. (ES75)
50. A Mesoscale Moisture Analysis of a Florida Sea Breeze from CAPE. Sixth Conference on Mesoscale Processes, Portland, Oregon, July 17-22, 1994. A. R. Guillory and G. J. Jedlovec. (ES43)
51. Modulation in the Heliosheath. Second Pioneer-Voyager Symposium, Durham, New Hampshire, May 31-June 3, 1994. S. T. Suess. (ES82)

Presentations (continued)

52. Molecular Contamination Study of Iridium-Coated X-Ray Mirrors. SPIE's 1994 International Symposium on Optics, Imaging, and Instrumentation, San Diego, California, July 24-29, 1994 (to appear in proceedings). D. E. Graessle, R. F. Elsner, S. L. O'Dell, et al. (ES84)
53. The Moving Gradient Heat Pipe Furnace and Its Potential for Use in Space Flight Operations. 1994 AIAA Space Programs and Technologies Conference, Huntsville, Alabama, September 27-29, 1994. D. C. Gillies, S. L. Lehoczy, N. J. Gernert, G. J. Baldassarre, and C. W. Bahr. (ES75)
54. The Multi-Spectral Solar Telescope Array VIII: Results of the Second Flight. SPIE's 1994 International Symposium on Optics, Imaging, and Instrumentation, San Diego, California, July 24-29, 1994. A.B.C. Walker, Jr., R. B. Hoover, T. W. Barbee, Jr., C. DeForest, J. Plummer, D. Martinez-Galarce, and M. Allen. (ES82)
55. The NASA Electrophoresis Program. International Aerospace Congress, Moscow, August 15-19, 1994. R. S. Snyder and P. H. Rhodes. (ES71)
56. NASA Shuttle Lightning Research: Observations of Nocturnal Thunderstorms and Lightning Displays as Seen During Recent Space Shuttle Missions. SPIE's 1994 International Symposium on Optics, Imaging, and Instrumentation, San Diego, California, July 24-29, 1994 (to appear in proceedings). O. H. Vaughan. (ES43)
57. Nearly Steady Flows in GONG Prototype Data. GONG Meeting, Los Angeles, California, May 15-21, 1994 (to appear in proceedings). D. H. Hathaway. (ES82)
58. A New, Advanced Fourier Telescope Performance for Hard X-Ray Imaging of the Sun. SPIE's 1994 International Symposium on Optics, Imaging, and Instrumentation, San Diego, California, July 24-29, 1994. Jonathan Campbell. (ES84)
59. Observable Signals from Coronal Heating Processes. IAU Symposium No. 165, Compact Stars in Binaries, The Hague, The Netherlands, August 15-19, 1994 (to appear in proceedings). P. Venkatakrishnan. (ES82)
60. Observation of Black Hole Candidates with BATSE. Snowmass 94-Particle and Nuclear Astrophysics and Cosmology in the Next Millennium, Snowmass, Colorado, July 6-9, 1994. B. A. Harmon. (ES84)

Presentations (continued)

61. Observations of Nocturnal Thunderstorms and Lightning Displays as Seen During Recent Space Shuttle Missions. 32nd AIAA Aerospace Sciences Meeting, Reno, Nevada, January 10-13, 1994. O. H. Vaughan. (ES43)
62. Observations of Nocturnal Thunderstorms and Lightning Displays as Seen During Recent Space Shuttle Missions. AMS Annual Meeting, Nashville, Tennessee, January 23-28, 1994. O. H. Vaughan. (ES43)
63. Observations of Soft Gamma Ray Repeaters. IAU No. 165, Compact Stars in Binaries, The Hague, The Netherlands, August 15-19, 1994 (to appear in proceedings). C. Kouveliotou. (ES84)
64. An Optimized Solution Arising from Experiments in X-Ray Crystallography of Proteins: Preliminary Findings on Computation. American Crystallographic Association Meeting, Atlanta, Georgia, June 18, 1994. David A. Noever and Subiiah Baskaran. (ES76)
65. Oscillations in Daily Tropical Average Rainfall, Temperature, and OLR. AMS Annual Meeting, Nashville, Tennessee, January 23-28, 1994. Roy W. Spencer and Vanessa L. Griffin. (ES43)
66. Plasmasphere Modeling with Ring Current Heating. 1994 Huntsville Workshop, Guntersville, Alabama, October 16-19, 1994 (to appear in proceedings). S. M. Guiter, T. E. Moore, and M.-C. Fok. (ES83)
67. Plausibility and Evidence of Ionospheric Transverse Ion Acceleration by Lower Hybrid Waves. 1994 Huntsville Workshop, Guntersville, Alabama, October 16-19, 1994. C. J. Pollock. (ES83)
68. Polarization Characteristics of the MSFC Experimental Vector Magnetograph. SPIE's 1994 International Symposium on Optics, Imaging, and Instrumentation, San Diego, California, July 24-29, 1994 (to appear in proceedings). E. West and M. H. Smith. (ES82)
69. Polarization Errors Associated with Birefringent Waveplates. SPIE's 1994 International Symposium on Optics, Imaging, and Instrumentation, San Diego, California, July 24-29, 1994 (to appear in proceedings). E. West and M. H. Smith. (ES82)
70. A Portable Ground-Based Atmospheric Monitoring System (PGAMS) for the Calibration and Validation of Atmospheric Correction Algorithms Applied to Satellite Images. 1994 SPIE Symposium on Optical Engineering in Aerospace Sensing, Orlando, Florida, April 4-8, 1994 (to appear in proceedings). S. Schiller and J. Luvall. (ES42)

Presentations (continued)

71. Preliminary Science Results for the United States Microgravity Payload Mission 2. Sixth Annual Spacebound Conference, Montreal, Quebec, Canada, May 18-20, 1994. P. A. Curreri. (ES75)
72. Preparation of N-(e-Nitrophenyl)-N-Methylaminoacetonitrile (NPAN) Derivatives for Nonlinear Optics. SACNAS (Society for Advancement of Chicanos and Native Americans in Science), Chicago, Illinois, March 24-28, 1994. E. Romero, R. D. Clark, and B. Penn. (ES76)
73. Problems with Thermal Conductivity in Simulating Ion Temperatures in Low Density Flux Tubes. 1994 Huntsville Workshop, Guntersville, Alabama, October 16-19, 1994 (to appear in proceedings). R. H. Comfort, P. G. Richards, P. D. Craven, and M. O. Chandler. (ES84)
74. Properties of Gamma-Ray Burst Precursor Activity as Observed by BATSE. 1994 Meeting of the AAS High Energy Astrophysics Division, Napa Valley, California, November 2-5, 1994. T. M. Koshut, C. Kouveliotou, W. S. Paciesas, G. N. Pendleton, G. J. Fishman, and C. A. Meegan. (ES84)
75. The Quick, Cheap, and Beautiful X-Ray Polarimeter. SPIE's International Symposium on Optics, Imaging, and Instrumentation, San Diego, California, July 24-29, 1994 (to appear in proceedings). M. C. Weisskopf, R. F. Elsner, M. Joy, S. L. O'Dell, and B. D. Ramsey. (ES01)
76. Quantitative Numerical Modeling of a Coronal Mass Ejection. Third SOHO Workshop, Estes Park, Colorado, September 26-29, 1994. Ai-Hua Wang, S. T. Wu, S. T. Suess, and G. Poletto. (ES82)
77. Quantitative Studies of Solar Active Region Loops Observed in Soft X-Ray from Yohkoh. 30th Plenary Meeting of COSPAR, Hamburg, Germany, July 10-22, 1994. C. C. Cheng, S. T. Wu, M. J. Hagyard, and E. Hiei. (ES82)
78. Rainfall Estimation Using Satellite Data. Seventh Conference on Satellite Meteorology, Monterey, California, June 6-10, 1994. D. E. Buechler, H. J. Christian, and S. J. Goodman. (ES41)
79. Refractive Index Measurement of Some Organic Materials and Water. 1st Annual Meeting of the Alabama Academy of Science, Troy, Alabama, March 23-26, 1994. A. Wilson, K. J. Chang, B. G. Penn, and D. O. Frazier. (ES76)

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80. Remote Sensing Instrumentation for Earth System Science at NASA Marshall Space Flight Center. First International Airborne Remote Sensing Conference and Exhibition, Strasbourg, France, September 11-15, 1994. A. R. Guillory, R. J. Blakeslee, R. E. Hood, G. J. Jedlovec, D. M. Mach, J. Rothermel, and R. W. Spencer. (ES43)
81. Remote Sensing of Substorm Dynamics via Radio Sounding. AGU Second International Conference on Substorms, Fairbanks, Alaska, May 18, 1994 (to appear in proceedings). P. H. Reiff, J. L. Green, R. F. Benson, D. L. Carpenter, W. Calvert, S. F. Fung, D. L. Gallagher, Y. Omura, B. W. Reinisch, M. F. Smith, and W.W.L. Taylor. (ES83)
82. Research Opportunities with the Pathfinder MSU Daily Temperature Datasets, Seventh Conference on Satellite Meteorology and Oceanography, Monterey, California, June 6-10, 1994. R. W. Spencer and V. L. Griffin. (ES43)
83. The Retrieval of Integrated Water Content from GOES I. Seventh Conference on Satellite Meteorology and Oceanography, Monterey, California, June 6-10, 1994. Gary J. Jedlovec, Anthony R. Guillory, and Grant S. Carlson. (ES43)
84. Retrieval of Rainrate Over Rough Sea Surfaces as Measured by the Advanced Microwave Precipitation Radiometer (AMPR). 1994 International Geoscience and Remote Sensing Symposium, Pasadena, California, August 8-12, 1994 (to appear in proceedings). Steve S.-T. Wu. (ES43)
85. Ring Current-Plasmasphere Coupling Through Coulomb Collisions. 1994 Huntsville Workshop, Guntersville, Alabama, October 16-19, 1994 (to appear in proceedings). M. C. Fok, P. D. Craven, T. E. Moore, and P. G. Richards. (ES84)
86. A Search for Shocked Grains in the KT Boundary at Braggs, Alabama. New Developments Regarding the KT Event and Other Catastrophes in Earth History, Houston, Texas, February 9-12, 1994. S. Y. Wdowiak, T. J. Wdowiak, D. C. Gillies, and M. Dudley. (ES75)
87. A Sensitivity Analysis of the Split Window Variance Ratio Technique for Estimating Precipitable Water. Seventh AMS Satellite Conference, Monterey, California, June 6-10, 1994. R. D. Knabb, H. E. Fuelberg, and G. J. Jedlovec. (ES43)

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88. Simulation of Future Passive Microwave Satellite Instruments Using High Resolution AMPR Aircraft Data. Seventh AMS Conference on Satellite Meteorology, Monterey, California, June 6-10, 1994. R. E. Hood, R. W. Spencer, F. J. LaFontaine, and E. A. Smith. (ES43)
89. Simulated Interannual Variability in the Hydrologic Cycle Over North America. AMS Sixth Conference on Climate Variations, Nashville, Tennessee, January 23-28, 1994. D. Fitzjarrald, F. Robertson, E. Barron, S. Thompson, and D. Pollard. (ES42)
90. The Solar X-Ray Imager for the Geostationary Operational Environmental Satellite (GOES). AIAA Space Programs and Technologies, Huntsville, Alabama, September 27-29, 1994. J. Davis, D. Bagdigian, S. Buschmann, D. Graig, K. Russell, and K. Wallace. (ES82)
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92. Specimen Image Optimization for the X-Ray Transmission Microscope. Eighth Annual Alabama Materials Research Conference, Tuscaloosa, Alabama, September 26-27, 1994. W. F. Kaukler, F. Rosenberger, and P. A. Curreri. (ES75)
93. A Spectroscopic and Thermodynamic Investigation of Mercuric Iodide Physically Confined in Porous Glass Hosts. Materials Research Society Fall Meeting, Boston, Massachusetts, November 28-December 2, 1994. D. O. Henderson, R. Mu, A. Burger, T. K. Chen, and D. O. Frazier. (ES01)
94. A Statistical Algorithm for Determining Convective Instability from GOES-I Imagery. Seventh AMS Satellite Conference, Monterey, California, June 6-10, 1994. P. Anil Rao, H. E. Fuelberg, and G. J. Jedlovec. (ES43)
95. Stray Light Analysis of a Reflecting UV Coronagraph/Polarimeter with Multilayer Optics. SPIE's 1994 International Symposium on Optics, Imaging, and Instrumentation, San Diego, California, July 24-29, 1994 (to appear in proceedings). S. Fineschi, M. Romoli, R. B. Hoover, P. C. Baker, M. Zukic, J. Kim, and A.B.C. Walker, Jr. (ES82)
96. A Study of the Effects of Background Subtraction on Occultation Imaging. Workshop on Imaging in High-Energy Astronomy, Frascati, Italy, September 26-30, 1994 (to appear in proceedings). W. S. Paciesas, S. N. Zhang, B. C. Rubin, B. A. Harmon, and G. J. Fishman. (ES84)

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97. Temporal Analysis Results of Gamma-Ray Bursts. IAU Colloquium No. 151, Flares and Flashes, Sonnenberg, Germany, December 5-9, 1994 (to appear in proceedings). C. Kouveliotou, T. Belloni, M. van der Klis, J. van Paradijs, J. P. Norris, G. J. Fishman, C. A. Meegan, and W. S. Paciesas. (ES84)
98. Temporal Analysis Results of Gamma-Ray Bursts. 17th Texas Symposium on Relativistic Astrophysics, Munich, Germany, December 12-17, 1994 (to appear in proceedings). C. Kouveliotou, T. Belloni, M. van der Klis, J. van Paradijs, J. P. Norris, G. J. Fishman, C. A. Meegan, and W. S. Paciesas. (ES84)
99. Terrestrial Environment (Climatic) Criteria Guidelines Document - Updated in 1993 for Use in Aerospace Vehicle Development. 32nd AIAA Aerospace Sciences Meeting, Reno, Nevada, January 10-13, 1994. D. L. Johnson, C. K. Hill, and L. W. Tyree. (ES44)
100. Thermal Design of High Altitude Balloon Gondolas for the Antarctic. 32nd AIAA Aerospace Sciences Meeting, Reno, Nevada, January 10-13, 1994. S. Spencer, D. Clark, and T. A. Parnell. (ES84)
101. Thermal Remote Sensing for Characterization of Landscape Influences on the Urban Climate. 90th Annual Meeting of the American Association of Geographers, San Francisco, California, March 29-April 2, 1994. Dale A. Quattrochi. (ES42)
102. Thermal Remote Sensing in Landscape Ecology: A Powerful Tool in the Characterization of Landscapes on a Functional Basis. Sixth International Congress of Ecology, Manchester, England, August 20-26, 1994. Jeffrey C. Luvall, James Kay, and Eric Schneider. (ES42)
103. An Undercooling Effect in Porous Glass: From Bulk to the Confined. Materials Research Society Fall Meeting, Boston, Massachusetts, November 28-December 2, 1994. Y. Xue, R. Mu, D. O. Henderson, and D. O. Frazier. (ES01)
104. The Use of Thermal Remote Sensing in the Development of Measures of Ecosystem Development and Integrity. Sixth International Congress of Ecology, Manchester, England, August 20-26, 1994. J. C. Luvall, J. Kay, and E. Schneider. (ES44)

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105. Using Organic Materials to Simulate Solidification Phenomena in Metals - Microstructural Development in Undercooled Alloys. Eighth Annual Alabama Materials Research Conference, Tuscaloosa, Alabama, September 26-27, 1994. R. N. Gruegel and F. Hua. (ES75)
106. Variability of Integrated Water Content (IWC) Over the Continental U.S. Water Vapor in the Climate System Conference, Jekyll Island, Georgia, October 25-28, 1994. A. R. Guillory and G. J. Jedlovec. (ES43)
107. X-Ray Performance of the Engineering Prototype Stellar X-Ray Polarimeter. SPIE's 1994 International Symposium on Optics, Imaging, and Instrumentation, San Diego, California, July 24-29, 1994 (to appear in proceedings). E. Silver, R. Elsner, M. Weisskopf, et al. (ES84)

APPENDIX

SSL PREPRINTS

1. Constraints on the Luminosity Function of Gamma-Ray Bursts Detected by BATSE. No. 94-101, February 1994. (PUBLISHED; SEE SECTION ON OPEN LITERATURE.) J. M. Horack, A. G. Emslie, and C. A. Meegan. (ES84)
2. Observation of GS 339-4 Hard State Outbursts in 1991 and 1992. No. 94-102, March 1994. (PUBLISHED; SEE SECTION ON OPEN LITERATURE.) B. A. Harmon, C. A. Wilson, W. S. Paciesas, G. N. Pendleton, M. S. Briggs, B. C. Rubin, M. H. Finger, G. J. Fishman, M. N. Brock, R. B. Wilson, and C. A. Meegan. (ES84)
3. A Maskless Gamma-Ray All-Sky Imager: BATSE/CGRO. No. 94-103, March 1994. (PUBLISHED; SEE SECTION ON OPEN LITERATURE.) S. N. Zhang, G. J. Fishman, B. A. Harmon, W. S. Paciesas, C. A. Meegan, R. B. Wilson, M. H. Finger, and B. C. Rubin. (ES84)
4. Statistical Survey of Pitch Angle Distributions in Core (0-50 eV) Ions from Dynamics Explorer 1: Outflow in the Auroral Zone, Polar Cap, and Cusp. No. 94-104, March 1994. (PUBLISHED; SEE SECTION ON OPEN LITERATURE.) B. L. Giles, C. R. Chappell, T. E. Moore, R. H. Comfort, and J. H. Waite, Jr. (ES83)
5. Papers to appear in proceedings of the Kofu Symposium, "New Look at the Sun," held Kofu, Japan, September 6-10, 1993. No. 94-105, April 1994. (PUBLISHED; SEE SECTION ON OPEN LITERATURE.) J. Porter, R. Moore, et al. (ES82)
6. The Turbulent Reconnection Wall in a Large Solar Flare. No. 94-106, April 1994, submitted to The Astrophysical Journal. R. L. Moore, T. N. LaRosa, and L. E. Orwig. (ES82)
7. Limits to Extensions of Burgers Equation. No. 94-107, June 1994, to appear in Quarterly of Applied Mathematics. S. Nerney, E. J. Schmahl, and Z. E. Musielak. (ES82)
8. BATSE Observations of Galactic Black Hole Candidates. No. 94-108, June 1994, to appear in Proceedings, NATO Advanced Study Institute: The Gamma-Ray Sky with Compton GRO and Sigma, Les Houches, France, January 25-February 4, 1994. W. S. Paciesas, B. A. Harmon, B. C. Rubin, C. A. Wilson, and S. N. Zhang. (ES84)
9. 10 μ m Detection of the Hard X-Ray Transient GRO J0422+32: Free-Free Emission from an X-Ray Driven Accretion Disk Wind? No. 94-109, June 1994. (PUBLISHED; SEE SECTION ON OPEN LITERATURE.) J. van Paradijs, C. M. Telesco, C. Kouveliotou, and G. J. Fishman. (ES84)

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10. The Continuum Spectral Characteristics of Gamma-Ray Bursts Observed by BATSE. No. 94-110, June 1994. (PUBLISHED; SEE SECTION ON OPEN LITERATURE.) G. N. Pendleton, W. S. Paciesas, M. S. Briggs, R. S. Mallozzi, T. M. Koshut, G. J. Fishman, C. A. Meegan, R. B. Wilson, A. B. Harmon, and C. Kouveliotou. (ES81)
11. BATSE Observations of Soft Gamma Repeaters. No. 94-111, June 1994, to appear in New Horizon of X-Ray Astronomy-First Results from ASCA, held Tokyo, March 8-11, 1994. C. Kouveliotou. (ES84)
12. Statistical Uncertainties in Temperature Diagnostics for Hot Coronal Plasma Using the ASCA SIS. No. 94-112, September 1994. (PUBLISHED; SEE SECTION ON OPEN LITERATURE.) D. A. Swartz, S. L. O'Dell, M. E. Sulkanen, and A. F. Tennant, Jr. (ES84)
13. Papers to appear in proceedings of: SPIE's 1994 International Symposium on Optics, Imaging, and Instrumentation (held San Diego, California, July 24-29, 1994). No. 94-113, September 1994. (PUBLISHED; SEE SECTION ON OPEN LITERATURE.) R. Austin, K. Dietz, R. Elsner, S. Fair, M. Fulton, M. Joy, J. J. Kolodziejczak, T. Minamitani, J. Mir, S. O'Dell, M. Pimperl, B. Ramsey, A. Tennant, M. Weisskopf, J. Youngen, et al. (ES84)
14. Observations of Lightning in the Stratosphere. No. 94-114, November 1994, to appear in Journal of Geophysical Research. W. L. Boeck, O. H. Vaughan, Jr., R. J. Blakeslee, B. Vonnegut, M. Brook, and J. McKune. (ES44)
15. Problems in American Education: Teaching Science and Mathematics. 94-115, December 1994, to appear in Kappa Delta Pi Record. Steven Nerney. (ES82)
16. On the Origin of "Dividing Lines" for Late-Type Giants and Supergiants. No. 94-116, December 1994, to appear in The Astrophysical Journal Letters. R. Rosner, Z. E. Musielak, F. Cattaneo, R. L. Moore, and S. T. Suess. (ES82)
17. Line-of-Sight Magnetic Flux Imbalances Caused by Electric Currents. No. 94-117, December 1994, to appear in Solar Physics. G. A. Gary and D. Rabin. (ES82)
18. Reduction, Analysis, and Properties of Electric Current Systems in Solar Active Regions. No. 94-118, December 1994, to appear in The Astrophysical Journal. G. A. Gary and P. Démoulin. (ES82)

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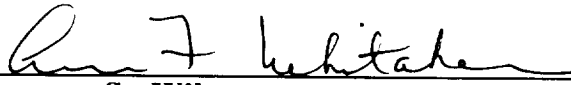
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T. W. Moorehead

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Gregory S. Wilson
Director, Space Sciences Laboratory

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This document lists the significant publications and presentations of the Space Sciences Laboratory during the period January 1-December 31, 1994. Entries in the main part of the document are categorized according to NASA Reports (arranged by report number), Open Literature, and Presentations (arranged alphabetically by title). Also included for completeness is an Appendix (arranged by report number) listing preprints issued by the Laboratory during this reporting period. Some of the preprints have not been published; those already published are so indicated. Most of the articles listed under Open Literature have appeared in refereed professional journals, books, monographs, or conference proceedings. Although many published abstracts are eventually expanded into full papers for publications in scientific and technical journals, they are often sufficiently comprehensive to include the significant results of the research reported. Therefore, published abstracts are listed separately in a subsection under Open Literature. Questions or requests for additional information about the entries in this report should be directed to Gregory S. Wilson (ES01; 544-7579) or to one of the authors. The organizational code of the cognizant SSL branch or office is given at the end of each entry.

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